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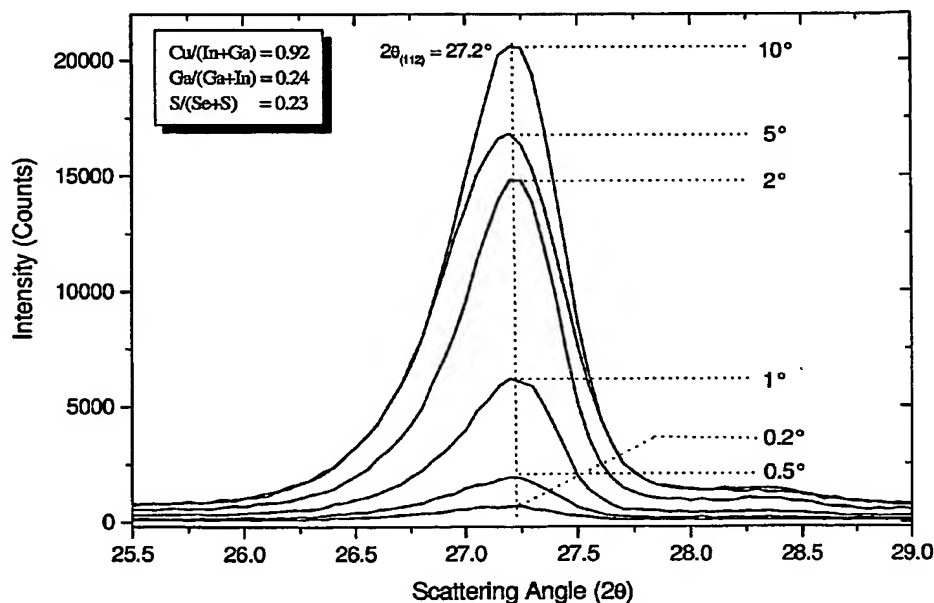
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(54) Title: **GROUP I-III-VI QUATERNARY OR HIGHER ALLOY SEMICONDUCTOR FILMS**



(57) Abstract: This invention relates to group IB-III<sub>A</sub>-VIA quaternary or higher alloys. More particularly, this invention relates to group IB-III<sub>A</sub>-VIA quaternary or pentenary alloys which are suitable for use as semiconductor films. More specifically, the invention relates to quaternary or pentenary alloys which are substantially homogeneous and are characterized by an x-ray diffraction pattern (XRD) having a main [112] peak at a  $2\theta$  angle ( $2\theta_{(112)}$ ) of from  $26^\circ$  to  $28^\circ$  for Cu radiation at 40kV, wherein a glancing incidence x-ray diffraction pattern (GIXRD) for a glancing angle of from  $0.2^\circ$  to  $10^\circ$  reflects an absolute shift in the  $2\theta_{(112)}$  angle of less than  $0.06^\circ$ .



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